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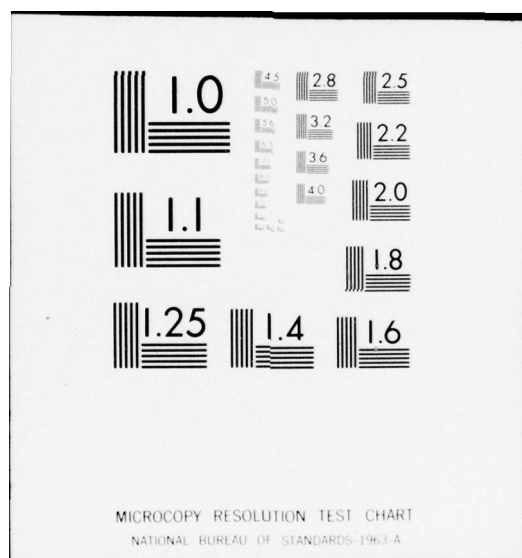   NOV 76   R M WELLBORN

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DEFENSE SYSTEMS MANAGEMENT COLLEGE

PROGRAM MANAGEMENT COURSE
INDIVIDUAL STUDY PROGRAM

FORMULATION AND USE OF LESSONS LEARNED
IN NAVSEASYSCOM ACQUISITION PROGRAMS

STUDY PROJECT REPORT
PMC 76-2

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FORT BELVOIR, VIRGINIA 22060

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DEFENSE SYSTEMS MANAGEMENT COLLEGE

STUDY TITLE:

Formulation and Use of Lessons Learned in NAVSEASYSCOM

Acquisition Programs.

STUDY PROJECT GOALS:

To determine how lessons learned are documented; their adequacy,
their comprehensiveness, and their applicability; along with an
evaluation of how the process enhances project management
corporate memory.

STUDY REPORT ABSTRACT:

This report presents a study of Ship Acquisition Reef Points,
a Naval Sea Systems Command document presenting lessons learned
and an ongoing lessons learned program. The stated purpose of
REEF POINTS, and lessons learned documents in other commands as
well, is to aid project managers. Interviews with NAVSEASYSCOM
project managers indicate that REEF POINTS makes very little
contribution to a project office's corporate memory because the
material rapidly becomes obsolete or lacks detail because of
sensitivity or because the contribution made to the writer are
incomplete. Also, the type of information which the project
manager deals with often is not amenable to documentation or
is beyond his control.

        The report concludes that lessons learned documents are
of little use in project offices but are of substantially greater
benefit in system acquisition training and education programs.
Lessons learned programs should be directed toward this latter use.

SUBJECT DESCRIPTORS:

lessons learned
case studies
limitations of lessons learned
corporate memory

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FORMULATION AND USE OF LESSONS LEARNED

IN NAVAL SEA SYSTEMS COMMAND ACQUISITION PROGRAMS

Study Project Report

Individual Study Program

Defense Systems Management College

Program Management Course

Class 76-2

by

Robert Morgan Wellborn, Jr.
CDR   USN

November 1976

Study Project Advisor
CAPT Paul B. Tuzo, USN

EXECUTIVE SUMMARY

Many large organizations have formalized programs for
promulgating lessons learned. This study project examines one
such program in the Naval Sea Systems Command (NAVSEASYSCOM)
and analyses it for utility and contribution to the organiza-
tion's corporate memory. Lessons learned programs usually
have four functions of (1) preventing current management from
repeating past errors, (2) providing inputs to the preparation
of policy and procedure documents, (3) assisting with on-the-
job training programs, and (4) provide teaching instruments
for academic instruction programs. Corporate memory primarily
is factored into NAVSEASYSCOM project offices by providing
experienced civilian cadre for matrix type organizations last-
ing the life of the program. Ship Acquisition REEF POINTS is
a comprehensive three part document describing the ship
acquisition process, lessons learned and a compendium of all
instructions dealing with the ship acquisition process. The
lessons learned part of REEF POINTS is the only viable lessons
learned program in NAVSEASYSCOM and this is analysed by in-
terviews of Navy project managers and civilian deputies. The
interviews determined the following limitations of lessons
learned.

1. Lessons learned cover ship acquisitions but are
lacking in coverage of the more classic weapons acquisition
programs.

2. They serve as book ends because of rapid obsolescence

in their content.

3. Real world project events normally transcend the level of detail usually contained in the lessons.

4. Those who best understand the lessons are the "doers" and therefore have insufficient time to fully document lessons. "Non-doers" carry out this function, and therefore crucial detail gets lost in the translation.

5. Many of the most important lessons lare beyond the control of the project manager or even NAVSEASYSCOM.

6. Those in a position to provide legitimate lessons are reluctant to air past mistakes unless sensitive detail is stripped away and the material is disguised.

Project managers indicated that with these inherent deficiencies REEF POINTS (and by implication other similar lessons learned programs) is of little value to the project management office and those generating policy for the office. On the other hand, lessons learned documents and similar case study material are of substantially greater value when used as teaching instruments in an academic environment. Therefore, the conclusion is that when functional and project commands generate lessons learned programs, one of the primary objectives should be to direct the document toward its usefulness as a teaching instrument in training and educational programs.

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SECTION I

INTRODUCTION

Purpose of the Study Project

The basic purpose of this study project is to ascertain
the contribution which lessons learned programs make to
program management and the program management office. The
key to this assessment is to determine if the publication of
lessons learned add significantly to the body of program
management knowledge already held within the program office.
This body of program management knowledge shall be referred
to as corporate memory.

Scope and Limitations

Every executive responsible for a complex organization
which is undergoing continuous, dynamic innovation in order
to deal with outside influences and internal capabilities,
must expend considerable thought and effort toward insuring
that a corporate memory is retained in the organization. There
are, of course, many management and organizational methods for
enhancing corporate memory during the normal course of bus-
iness. Technology, personnel training, personnel rotation
policies, political constraints, the social or labor environ-
ment, and the competition or threat are representative, broadly
understood factors influencing the methods used to build
corporate memory. This paper focuses on one method frequently
used, and this shall be called promulgating lessons learned,

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and it further confines itself to examining lessons learned procedures in one complex, dynamic organization, the Naval Sea Systems Command (NAVSEASYSCOM). The supposition is that conclusions drawn from a detailed examination of this organization will have general applicability.

Specific Goals

The four specific goals to be achieved are as follows:

1. Determine how NAVSEASYSCOM lessons learned are documented and promulgated.

2. Evaluate their comprehensiveness, applicability and utility in NAVSEASYSCOM project* offices.

3. Determine the contribution they make to NAVSEASYSCOM project corporate memory.

4. Evaluate the utility of lessons learned in an academic or training environment and compare them to the previous two goals.

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*Program and project office are interpreted to be inter- changeable words. In NAVSEASYSCOM, the project office usually is the term in ship acquisition offices while program is the term in weapons system acquisition offices. No particular significance is attached to whether program or project is used in a particular context.

This paper is divided into four basic sections dealing with (1) the lessons learned program at NAVSEASYSCOM, (2) a corporate memory evaluation of NAVSEASYSCOM project offices, (3) an evaluation of the contribution the lessons learned program makes to the project offices, and (4) a recommendation of how lessons learned programs should be applied.

SECTION II

LESSONS LEARNED

Basic Potential Uses

The preparation, distribution and use of lessons learned documents, and case study material having the same purpose, long have been a part of the normal administrative procedures of military, commercial, government and academic institutions. In general, the purposes have been fourfold, as follows:

1. Provide assistance to current management in avoiding past mistakes.

2. Provide guidance to those preparing policy and procedure documents for future use.

3. Provide instruction during on-the-job training programs for management trainees.

4. Provide teaching instruments at academic institutions.

Although there can be classifications of lessons learned purposes in addition to the above four, a basic dividing point usually is how they are used either within the preparing organization, such as in the first three purposes, or their external use, such as when the Defense Systems Management College uses lessons learned material prepared in program offices. Lessons learned material frequently is formally titled by that name, but this paper also encompasses case study material having lessons learned content.

Overview of Analysis

The context of the forthcoming analysis will be limited to NAVSEASYSCOM because it is a large, complex organization with a formal lessons learned program. The nature of this program is somewhat unique, but the underlying presumption in limiting the context is that the four previously mentioned purposes may be analysed with respect to NAVSEASYSCOM and the results will be sustantially applicable to the entire military weapons system acquisition establishment. This is because most findings arise from the nature of the weapons acquisition process rather than from the particular way NAVSEASYSCOM conducts the process. In fact, evidence from a project to institutionalize a Department of Defense (DOD) system for promulgating lessons learned throughout the three uniformed services and DOD suggests that there are a wide variety of effective lessons learned programs which uniformly accomplish the same four purposes but are unique in procedure.[1] The same evidence also supports the applicability of this paper to these other lessons learned programs.

The analysis of NAVSEASYSCOM lesssons learned will determine how they are used for project/program office daily management in avoiding the same mistakes, policy guidance, on-the-job training and academic instruction. With respect to the first three purposes, that is, the internal ones, genuine issues are raised concerning their utility to current management. The contribution these lessons learned make to

NAVSEASYSCOM project corporate memory also will be analysed considering both the internal and external purposes. Here again though, issues are raised which suggest the formal lessons learned program is of limited value in contributing to the corporate memory of NAVSEASYSCOM project offices. The experienced manager intuitively would expect these limitations to exist, so a useful analysis should go beyond confirming suspicions and contribute meaningful uses of lessons learned to literature on the subject. The introduction implies that lessons learned are but a small sub-set in the large body of contributions to corporate memory, so before any fair con-clusions are drawn concerning their internal utility, the lessons learned program must be properly cast within the framework of NAVSEASYSCOM project office corporate memory.

PART III

CORPORATE MEMORY IN NAVSEASYSCOM PROJECT OFFICES

NAVSEASYSCOM Organizational Structure

A basic overview of the NAVSEASYSCOM organizational structure consists of the following points:

1. NAVSEASYSCOM is a large functional organization overseeing the entire Navy surface ship and submarine acquisition and maintenance establishment. This includes the ship and ordnance system project offices; the supporting administration offices; substantial integral design, contracting, system analysis, and cost analysis functional offices; functional offices for coordination of research and development projects in Navy laboratories; the ship overhaul and repair activities and many features of the ship and combat system logistic support establishment.

2. The project offices and functional support are centralized in the Washington, D.C., area, with most offices in the Crystal City complex under the title of Headquarters, Naval Sea Systems Command.

3. The headquarters is roughly divided into ship and ordnance project/program offices along with the functional organizations supporting the acquisition program.

4. Each ship class acquisition program is commanded by a Ship Acquisition Project Manager (SHAPM) whose project also includes the acquisition of the ship's ordnance and electronic

suit (the combat system).

5. Programs to develop new ordnance to replace existing systems are commanded by project managers.

6. Combat system integration into a new ship class is conducted by Participating Managers (PARMS) under the command of the SHAPM. In many instances, elements of the combat system are ordnance acquisition programs proceeding concurrently with the ship acquisition project.

7. Most ship design services, search radar and communication electronics, and aviation related design and equipment are contributed by other systems commands having direct responsibility for these groupings of systems. Again, PARMS coordinate the integration of each of these sub-systems into the ship's combat system.

Numerous documents describe the complex interorganizational relationships necessary to build a class of major combatant ships, so the discussion of NAVSEASYSCOM organization will not be further detailed. A voluminous bibliography for the organization and process is contained in a newly published NAVSEASYSCOM document known as Ship Acquisition REEF POINTS,[2] which in turn was prepared in accordance with NAVSEA Instruction 9060.4 dated 29 March 1976 and titled "Ship Acquisition Process."

Corporate Memory Description

The obvious ingredients of corporate memory are contained in the NAVSEASYSCOM Organization. The vast majority

of military and civilian billets in the project, functional
and process offices are manned by people knowledgeable in
ship acquisition and, as would be expected, civilian per-
sonnel job rotation is considerably less than military rotation.
Nevertheless, numerous key military billets, especially project
managers, are filled by persons having long time experience
in NAVSEASYSCOM and long term associations with their own or
similar projects. The concentration of NAVSEASYSCOM project
offices and functional support in the Washington area also
contributes significantly to corporate memory because of con-
tinuing access to rotated personnel within the organization.

With the exception of the TRIDENT submarine/missile/
support base acquisition program, NAVSEASYSCOM project offices
are intermix or matrix type organizations. These organizations
are substantially staffed by civil service cadre having a com-
mitment to the project for its entire life. This experienced
cadre provides a major component of the project's corporate
memory and its links to the functional and process offices.[3]
A second substantial input to corporate memory is provided by
the assignment of military project managers who have exten-
sive experience in ship and weapon acquisition and who have had
a long term commitment to the project itself. If one assumes
that the functional organization has the greatest degree of
corporate memory, then the matrix form of the project office
organization has substantial potential for drawing from the
functional organization's corporate memory.

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The complexity of ship acquisition programs; not only with respect to the ship and its propulsion, electrical, battle damage control and living facilities; but also with respect to integrating search radar, sonar, missile, gun, torpedo, target acquisition and fire control, electronic warfare, aviaition support, communications, command and control systems; is such that no one organizational type or leadership type has proved to be successful in all circumstances. The immediate conclusion to be drawn from this fact is that a diffusion of corporate memory through the project offices is absolutely essential to successful acquisition programs. Given the necessity to draw on corporate memory to the greatest extent possible in ship acquisition programs, every management method enhancing its diffusion would be expected throughout NAVSEASYSCOM. Thus, using this same logic, we see some justification for concentration of program offices in one geographic area, the use of matrix type project management, extensive on-the-job training programs and "trade school" courses, a vast body of formal instructions and interorganizational agreements, extensive interpersonal contact among project offices and the promulgation of documents such as the previously mentioned REEF POINTS. Obviously, the total justification for NAVSEASYSCOM project organizations and methods of doing business is based on far more than corporate memory considerations, but they do play a key role and are germane to any full discussion on NAVSEASYSCOM's methods of doing

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business.

With respect to project offices, corporate memory may
be defined as "a mental continuum of project history; that
is, knowing how and why things have gotten to be the way
they are; including all the understated and undocumented
considerations in the project's history."[4] From this ample
body of knowledge the sub-set of "how to" documentation may
be derived, and this is the basis for the publication of
REEF POINTS. The following quotation is taken from the book's
Foreword.

> "It is intended to provide sailing directions for the
> Ship Acquisition Project Manager (SHAPM) and his staff,
> that will explain the many actions that are required to
> successfully complete a ship acquisition. These sailing
> directions showing the total process, should put into
> perspective the many actions required in the total process,
> and should serve as a check-off list for the development
> of the plans and actions to be taken."

Taking REEF POINTS as a representative and worthy effort
toward enhancing corporate memory and noting that one of its
three basic parts is entitled "Lessons Learned," we may proceed
with a detailed analysis expecting to find its true place in
the sun.

PART IV

REEF POINTS Evaluation

Description

REEF POINTS is the only document in NAVSEASYSCOM whose purpose is to promulgate lessons learned on a continuing basis. Other forums have existed but this is the one given primary emphasis, particularly by Vice Admiral Gooding, USN (Ret), former Commander, Naval Sea Systems Command. Strong emphasis on promulgating lessons learned throughout the Naval Material Command (NAVMAT) is being given by the current Commander, Admiral F.H. Michaelis, and REEF POINTS is considered to be responsive to this emphasis.[5]

A brief description of REEF POINTS is in order because its method of preparation and contents have some bearing on the conclusions of the analysis, particularly if one hypothesizes alternative methods for presenting lessons learned. NAVSEASYSCOM Code 0762 has been given the responsibility to prepare and update REEF POINTS. The initial inputs for the lessons learned portion were solicited from the various project managers by written correspondence and then by detailed interviews. The description of the ship acquisition process was prepared from thorough research and extensive NAVSEASYSCOM experience.[6] The document is divided into three independent parts as follows:

"Part I   Description of the acquisition process

Part II Lessons learned in application of the process

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Part III Listing of directives bearing on the process with a synopsis of each directive."[7]

The lessons learned part of REEF POINTS is divided into two parts; the first applies to managing the entire ship acquisition program and the second applies to the acquisition of shipboard installed computer programs. A considerable amount of "how to" information also is contained in the computer section. The lessons themselves are disguised, but recongnizably real, and detail past problems in such areas as building and managing the staff, costs and estimating, claim prevention, risk analysis and concurrency, combat system integration, PARM and SHAPM relations, etc.

Although the published version of REEF POINTS had not been distributed at the time interviews were conducted, almost all project managers were familiar with its contents as a result of contributions to and reviews of the draft documents. So, in the minds of those to whom it is meant to apply, REEF POINTS already exists as a contribution to the documentation and literature on ship acquisition.

In order to maintain its current usefulness, continuous contributions of lessons learned are required by the previously cited NAVMAT Instruction 9060.4. REEF POINTS PART II provides a format and classification system for submissions of new and updated lessons learned. A typical example of the updating process is given in a case where NAVMAT memorandum "00 Memo 239-76" of 6 April 1976 cites lessons learned in preparing for

contract negotiations and requires they be included in an
addendum to REEF POINTS. NAVSEA Notice 4200 of 3 August 1976
implements coordinating policies for the particular aspects
of preparation for contract negotiation "hard spots" and ends
with the following cancellation contingency: "When information
is incorporated into NAVSEA publication Ship Acquisition Reef
Points."

Limitations of Lessons Learned

Based on the above information, we may conclude by in-
spection that REEF POINTS is comprehensive, conceptually sound,
and reasonably accurate. To determine how well it may full-
fill its stated purpose, a number of interviews with project
managers and functional managers were conducted. Material from
some of these informally structured interviews already has been
cited in that the interviews covered information in addition
to an evaluation of REEF POINTS' utility to the project
manager. The salient points of the evaluation portion of the
interview series are described in the following paragraphs.

1. The emphasis REEF POINTS places on the SHAPM aspects
of acquisitions is of limited value to the weapons acquisition
manager because so many features of ship acquisition are unique
to the SHAPM. Weapons acquisition follows the more "classic"
lines of the other systems commands and servies. Since the
business environment faced by the weapons project manager
frequently is different than that faced by the SHAPM, more
separate but analagous treatment should be given to weapons

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systems in REEF POINTS.[8] From the NAVMAT viewpoint, though, ship and weapons acquisitions are inseparable since the SHAPM frequently manages both projects through the transactions of the PARM.[9]

2. Past experience with lessons learned programs tags REEF POINTS with the book ends syndrome, although it is too early in the document's life to say this is applicable. The point in this analysis, though, is that in REEF POINTS, as well as any other publication, preparation and promulgation take so long that in a current project office the published version amounts to a history of past events. The comprehensiveness and volume of REEF POINTS tend to exacerbate the normal delays, thus making it a genuine candidate for book ends in current project offices.[10] The previously noted NAVMAT contracting hard spots memorandum in April 1976, followed by the NAVSEA Notice in August 1976, and in turn followed by the distribution of REEF POINTS in October/November of 1976 is a case bearing out the contention. The actual lesson learned was originally stated in a letter from the Guided Missile Fast Frigate (FFG) project SHAPM in March 1976, so we see a case where the SHAPM knows the lesson at least nine months before it is formally promulgated.

3. In most project offices real world reactions transcend the level of detail contained in REEF POINTS. Interpretations of current documents, shades of meaning expressed in descriptions of policy, decisions and judgements made on

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the basis of mutual trust or professional reputation all are a substantial part of daily business in the project office and form the basis of many lessons learned.[11] Translating these into meaningful documentation is a laborious process where small but collectively significant details fall through the screening process and are lost except to the corporate memory where the event took place.

4. In any large bureaucratic organization there is a natural tendency for the "doers" to man the fire lines and keep the store from burning down while the "non-doers" stand aside and document the process. Thus, what gets written is the non-doers' version of lessons learned because the doer is too busy fighting the fire. As a result, the same type of policy, decision and judgement considerations noted in the previous paragraph tend to be only partly documented by the doer in private notes, weekly logs, memos to file, etc. Often these simply can not be adequately translated by the non-doer or, for reasons to be discussed later, the sensitive aspect of the information cannot be made available to the non-doer.[12]

5. In many cases primary motivations driving SHAPM decisions are beyond his control and to a large extent beyond the control of NAVSEASYSCOM. Declining profit in the ship building industry certainly is the basis for many lessons learned, but the SHAPM can do little to rectify the problem or avoid the ponderous rush to the claims court. Another example is the fact that the SHAPM funnels money through PARMS and

projects in other system commands where gaps in the personnel rotation and relieving process interrupt the continuous tracking and accountability for how the money is spent. These type of lessons learned tend to be undocumented in REEF POINTS because flailing at windmills may be the only current solution. Time and effort will bring solutions, but the current file of lessons learned often does not address the really dark clouds hanging overhead.[13]

6. Hanging out dirty linen for public viewing not only runs counter to human nature but may be unjustly damaging as well. For this reason the first interviews conducted by code 0762 to obtain inputs for the draft REEF POINTS were innocuous and of little value. The case studies and lessons then were disguised to protect the innocent (as well as the guilty) and sensitive information was stripped from the draft material. These features increased the amount of available and useful information provided by the program offices and certainly improved the quality of REEF POINTS. The current project manager immediately recognizes the lack of essential and crucial detail, though, and so REEF POINTS loses some stature that simply cannot be restored to the product.[14] Methods to handle sensitive information and increase the internal (only) flow of dirty linen information have been discussed but no solution is being attempted or tested at the present time.[15]

7. For the past 10 1/2 years the author has participated in about six FIRST, THIRD and SEVENTH Fleet lessons learned

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projects as a writer, evaluator or user at different stages
of his career and in different billets. In general fleet
lessons learned suffer the same deficiencies with respect to
use by ship and operational commanders as those documented in
the previous paragraphs for project managers. Although the
lessons learned programs did not achieve their loftiest aims,
they were useful and worthwhile for other purposes in the fleet.

Utility of REEF POINTS

With the above deficiencies in mind, the interviews
were structured to obtain qualified opinions on the real utility
of REEF POINTS, and by implication the utility of lessons
learned programs and their contribution to corporate memory
were questioned. The essential point with regard to the previous
description of deficiencies is not that they exist, but rather
that they exist only with respect to use by the current genera-
tion of project managers who have just learned the lessons they
documented. Future project managers won't find the same re-
lationship to the current REEF POINTS, but they probably will
have the same judgement concerning future lessons learned pub-
lished from their own inputs. Some of the problems in ship
acquisition now being corrected by project managers are cyclic
in nature and have been corrected several times in the 200
year history of Navy shipbuilding.[16] REEF POINTS' survival as
an ongoing, viable document is dependent on its current use-
fulness and the resultant motivation to keep it updated, so

even though obviously it will be useful to the future SHAPM, current motivation to maintain it must be examined.

The real lessons learned in the project office come from briefings, letters, chain of command verbal policy and much of this is quickly transferred into corrections and modifications to existing instructions. The great body of justification and unrealized ramifications exist within the mental continuum (corporate memory) of the project and in the functional offices involved. The total of the written and unwritten is the project manager's daily life, but few others in the project office show such a grasp of the situation. So, for the novice, trainee, student, uninitiated, etc., REEF POINTS has far more utility than for the SHAPM. REEF POINTS primarily exists for the previously referred to non-doer, particularly for those who may rise through the organization to eventual project managership. Therefore, the valid motivation to maintain REEF POINTS should be based or exploiting its utility to those learning the ship acquisition process.

Application of Lessons Learned to Training Programs

Because there are inherent limitations to the process of promulgating lessons learned in the REEF POINTS style, there is little to be gained in improving it to the point of being good enough for use in preaching to the choir. The effort required probably would not be successful and the congregation would gain little more than already has been achieved. The inherent limitations which justify tailoring REEF POINTS to

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training purposes, rather than SHAPM utility, are as follows:

1. Sensitive information cannot be presented in open literature and a cumbersome procedure to diffuse it in written documentation is not likely in today's precedence

2. The players involved in unfortunate circumstances, poor judgement, failures and similar case material must be disguised in open literature in order to promote honest reporting and internal appraisal based on the true facts. The disguise results in an unavoidable loss in translation, though, so the result is useful only to the non-doer. The SHAPM/ project manager must have access on a case basis to the entire body of literature in order to achieve adequate utility from case studies. The mechanism of closely held "incident reports," based on full disclosure to those who need to know, can not be employed in a document of REEF POINTS' distribution.

3. In lessons learned situations as complex as those frequently encountered in ship acquisitions, the truth itself sometimes is a judgement call subject to a variety of interpretations which go beyond the capacity of a document writer to portray adequately. Enormous demands would be placed on the project manager to carefully, explicitly and meticulously document these cases in sufficient detail to serve as a cook book for a peer (or preaching to the choir).

4. Since many events and institutions impacting on the project are not controlled by the SHAPM, some recognized difficulties simply cannot be avoided at any reasonable cost

or effort. Some of these are inevitable as the swing of the pendulum and have far more relation to such things as the economy, political evaluation of the profit motive and national priorities perceived in the political arena, and therefore go far beyond the scope of REEF POINTS in promulgating lessons learned.

This analysis of REEF POINTS comes to the conclusion that it is and should continue to be oriented toward project management training in NAVSEASYSCOM. It does not and probably cannot live up to the advertized motive "--- to provide sailing directions to the Ship Acquisition Project Manager (SHAPM) and his staff, that will explain the many actions that are required to successfully complete a ship acquisition." Extending the above conclusion to the larger arena of the contribution lessons learned make to corporate memory requires examination of additional information.

PART V

CONTRIBUTION OF LESSONS LEARNED TO CORPORATE MEMORY

The Real Place for Lessons Learned

The following analysis and conclusions are those of the author since interviews described in the previous sections were not structured to produce evidence on how lessons learned really should be used. Giving the mantle of universality to the conclusions drawn regarding REEF POINTS implies that lessons learned promulgation should be directed primarily toward the training and teaching environment. Such a conclusion over-looks the vast body of specialized investigation used by al-most every organization for internal control, but the nature of lessons learned from this body of knowledge usually is governed by limited access and distribution. These latter lessons become both a part of the corporate memory for those few who have access to the information and also are included in the updated governing directives of the organization, frequently without reference to the source or reasons. As a result, the how-to and how-not-to aspects of daily business don't get documented until a REEF POINTS style project is un-dertaken. Then we find that the result is not good enough to substitue for the more specialized internal controls and investigations and so the REEF POINTS style document languishes and soon is relegated to the book ends role by management.

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Such should not be the case where management recognizes the value of what shall be called a "reef points program" (for further colloquial reference) to enhance corporate memory by training and academic instruction. Theoretically, the internal promulgation of sensitive information vital to the success of the project office will be efficient and purposeful to the extent that no further analysis is required in this paper. Projects foundering due to internal control problems usually have difficulties transcending the lessons learned considerations discussed so far. Therefore, the remainder of this paper will be devoted to justifying a reef points program based on case studies and lessons learned. The two concepts of case studies and lessons learned will be used synonamously.

DOD Initiatives

A recent series of informal discussions between the highest offices of the Secretary of Defense and the Defense Systems Management College (DSMC) deal with a request to undertake case studies of lessons learned in major weapon system acquisition programs. The essential point of this series of discussions is that the case studies are desired for in-structional purposes - not for project management purposes. The discussions bear no relation to this paper's distinction between a reef points program and internal project control oriented documents, but the emphasis on lessons learned for instructional purposes implies a recognition of the limitations

of a reef points program.

Historically, academic instituions, DSMC included, have developed their own case studies as teaching instruments keyed to the assigned subject matter. The limitations discussed in the analysis of REEF POINTS also are inherent in these academically prepared case studies. The question raised by the DOD discussions is who should prepare the case studies, if preparation is in fact required. Considering the amount of material dealing with military acquisition lessons learned already in use at DSMC, various command and staff colleges, systems command schools, etc., preparation of a new series of case studies is not particularly relevant, except as necessary to stay abreast of the real world.

What is particularly relevant to the discussion series is the very important role reef point programs can play in providing case study lessons learned to academic institutions specializing in weapons system acquisition. The material in REEF POINTS is ideal for academic use and it represents a significant contribution to the amount of real world corporate memory that the student may take from the schoolhouse to the project office. The fact that REEF POINTS can be of genuine academic use at DSMC is not sufficient motivation to keep it updated at NAVSEASYSCOM, though, unless command emphasis is directed toward such motivation. Instilling such motivation should be the thrust of any new DOD initiatives to undertake case studies for instructional purposes.

Conclusion

REEF POINTS is indicative of the magnitude and quality
of material that project and functional organizations can
provide in the course of attempting to satisfy their own needs.
Altering the emphasis away from reef point program fulfillment
of internal organizational needs and toward building corporate
memory in to the project management trainee is not necessarily
a demotivating influence for those preparing the document.
Incentives and recognition for the genuine academic utility
of REEF POINTS may be expected to produce a more positive in-
fluence on maintaining its viability than does the current
motivation to produce a document of much less utility to the
SHAPM. Again, the thrust of this concluding paragraph is that
system command reef point programs providing lessons learned
should be oriented toward satisfying academic enhancement of
corporate memory in the student, rather than fulfilling un-
attainable internal project control goals which make an even
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